TB CASE INVESTIGATION AND CASE MANAGEMENT PARTNERSHIP IN CARE SESSION THREE

Division of Global Populations and Infectious Disease Prevention Bureau of Infectious Disease and Laboratory Sciences Department of Public Health
Welcome

Effective TB response requires knowledge, skills, and partnerships – and comes with challenges and opportunities

New introductory/foundational training series for

- New local public health partners
- Local public health nurses who haven’t provided TB case management recently

Hope to illustrate shared partnerships essential to disease response
Series of three webinars

- Introduction to Tuberculosis (archived)
- Introduction to TB Disease Response and Case Management (archived)
- Introduction to TB Contact Investigations (today)

Webinars and slides are archived in MAVEN Help [Division of Global Populations folder]
INTRODUCTION TO TB CONTACT INVESTIGATION

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Session Three Objectives

- Discuss elements of contact investigations
- Determine when a contact investigation is indicated
- Review infectious period
- Describe process of targeted interviewing to obtain contacts
- Identify testing strategies for testing contacts
- Outline the case cascade for contacts to active cases
- Discuss resources available for case investigation and case management
Key Massachusetts Regulations and Laws

- 105 CMR 300: Reportable diseases, surveillance, and isolation and quarantine requirements
  - TB infection and TB disease are reportable
- 105 CMR 365: Standards of management of TB outside hospitals
  - 365.200: Case management – *includes contact investigation*
  - 365.600: Discharge planning from hospital into out-patient setting
- MGL Chapter 111 Section 94A-C: Compulsory hospitalization of person with infectious TB
Considerations in Early Response

- Establish and support partnership with local health and clinical provider
- Review disease presentation
  - Site of disease
  - Symptoms and duration of symptoms
  - Risk factors
- Identify possible exposure sites
- Establish need for contact tracing/contact investigation
- Reinforce confidentiality
Clinical Indicators for Contact Investigations

- Abnormal X-ray and/or laboratory tests indicating infectiousness
- Presence of symptoms esp. coughing and symptom onset
- Additional medical conditions of the case that could increase infectiousness.
- High risk populations as the exposure site
- TB test conversions in household contacts
- Extra-pulmonary cases are not contagious unless aerosolized for inhalation
Contact Investigations

- State and local health departments have legal responsibility to
  - Investigate TB cases and contacts reported in their jurisdiction
  - Evaluate effectiveness of TB investigations

- Although the health department maintains legal responsibility, some steps may be delegated or shared
  - Health care settings, worksite settings, schools and universities
  - Congregate facilities – corrections, shelters
Contact Investigations: Who is Responsible

Local case manager
- Covers specific town(s)
- Direct responsibility for patient care and management of disease
- Conducts interviews with the person diagnosed with TB
- Conducts screening for identified contacts
- Provides results to contacts
- Refers contacts to clinic
- Follows contacts until treatment is complete

State Health Department
- Team Coverage includes Nurse, Epidemiologist, and Direct care services
- Provides clinical and technical assistance
- Can provide interpreter assistance
- Provides PPD solution
- Arranges for IGRA test
- Assists with referral to clinic
- Collects and analyzes all contact data
Systematic Approach to Contact Investigations

The systematic approach includes 10 steps:
1. Review existing information about the case of TB
2. Determine an initial estimate for the infectious period and estimate the degree of infectiousness
3. Interview the person diagnosed with TB
4. Review information and develop a plan for the investigation
5. Refine the infectious period and degree of infectiousness

These steps may not always be done in sequential order
Systematic Approach to Contact Investigations

6. Prioritize contacts
7. Conduct field visits including household, school, worksites
8. Conduct contact assessments
9. Determine whether to expand or conclude an investigation
10. Evaluate the Contact investigation activities

*These steps may not always be done in sequential order*
What is the Infectious Period?

The time period during which a person with TB disease can transmit *M. tuberculosis*
Why is it important to estimate the infectious period?

- Focuses investigation on contacts most at risk for exposure
- Sets the time frame for contact assessment
- May impact investigations required for congregate settings
- Can influence number of rounds of testing required for identified contacts
## Estimating the Start of the Infectious Period

### Characteristic of Case

<table>
<thead>
<tr>
<th>TB signs and/or respiratory symptoms</th>
<th>AFB sputum smear or NAAT positive</th>
<th>Cavitary chest X-ray</th>
<th>Estimated onset of infectiousness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>3 months before symptom onset or first finding consistent with TB disease, whichever is longer</td>
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<tr>
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<td>3 months before first findings consistent with TB disease</td>
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<tr>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1 month (4 weeks) before date of suspected diagnosis</td>
</tr>
</tbody>
</table>
Interviewing the Patient

- First interview within 72 hours of TB Case Report Form received (active/suspected active TB)
  - Subsequent interviews as patient has time to adjust to disruptions caused by the illness
- Interview in-person at a convenient location that accommodates the patient’s right to privacy
- Interviewing skills are crucial since person might be reluctant to share information
  - Disease associated stigma
  - Social stress related to illness
During interviews

Ask the person **where** they spent time during the infectious period

- Household/living situation
- Workplace, school or volunteer sites
- Social, religious, leisure, or recreation sites
- Congregate settings
  - Shelters and or correctional settings
During interviews

Ask *with whom* they spent time with during the infectious period, for example:

- Spouse or significant other
- Parent
- Children
- Household members
- Other family members
- Friends
- Roommates
- Coworkers
During interviews

- Ask for names* and contact information
  - Phone number, address, DOB*, gender*

- Ask if contacts
  - Have TB symptoms
  - Have weakened immune systems
  - Are children younger than 5 years of age
During interviews

- Ask about activities during infectious period
  - Routine schedule
  - Social events or holidays
  - Travel
  - Transportation/carpooling

*Ask about number of hours per day/week*
Concentric Circle for those without medical risks

- **Household Contacts:**
  - Negative
  - Positive

- **Non-Household Contacts:**
  - Negative
  - Positive

- Less Time
- Greater Distance

Index Case

Lower Risk
Assign Priority Risk to Identified Contacts

- Once a list of contacts is obtained, the contacts should be prioritized to determine who should be immediately located and assessed for TB disease or infection.

- The priority assigned to individual contacts should be based on the following:
  - Likelihood of transmission from the case
  - Contact’s risk for development of TB disease
Which contacts should be given priority for TB assessment?

Priority should be given to contacts who

- Have symptoms of TB disease
- Are at risk for rapid development of TB disease
- Had repeated or extended exposure
- Were exposed in an environment where transmission was likely, such as a small, crowded, or poorly ventilated room or vehicle
- Were exposed during medical procedures that can release substantial numbers of *M. tuberculosis* into the air (e.g., bronchoscopy)
When should contact investigations be expanded?

Sometimes a contact investigation should be expanded if there is evidence of recent transmission:

- Unexpectedly high TB disease or LTBI rates among priority contacts
- Large number of contacts with change in infection status from negative to positive
- TB disease in any contacts who had been assigned low priority or TB disease in those previously not identified as contacts
- Infection in any contacts younger than 5 years of age
Expanding a contact investigation

- Decision to expand Contact Investigation should be based on routine review of the investigation data including results of testing.
- Results should be reviewed weekly.
- Decision to expand the investigation is done in collaboration with the State Health Department.
- In the absence of recent transmission, the investigation should not be expanded to lower-priority groups.
Other important considerations

- If a second active TB case is found during the investigation, this second case will need their own case and contact investigation.

- If a case is considered highly infectious and you find few contacts and/or find little evidence of transmission, you may need to go back and review your records and determine if a re-interview is needed.
Care Cascade - Testing

**Local Public Health: Steps for Contact Investigation**

- **Identify persons exposed**
  - Determine period of infectiousness
  - Interview individual with infectious TB: determine exposure sites
  - Develop education and screening plan

- **Administers screening tests**
  - Choose an appropriate screening test
  - Document test type and result; provide results to individuals
  - Final test is 8-10 weeks after last exposure, unless initial test is positive

- **Link to evaluation services**
  - Link to TB outpatient service or provider for medical evaluation in the context of new exposure
Developing a plan for testing

- Contacts have been identified
- Interview has been conducted
- Consultation with DPH TB Staff for next steps
  - Testing strategy: IGRA and/or Tuberculin Skin Tests
  - Contact Investigation Events with large contact testing
- Determine how many rounds of testing will be needed
  - If last exposure > 8 weeks ago, only one round of testing
- Providing contact information to MDPH staff so MAVEN event can be created and linked to the source case
Rounds of Testing

Contacts should be tested when they are identified and then 8-10 weeks after last exposure.

Date of last exposure can vary by contacts

Example:
- The last date the index case was at the workplace was February 1st which makes it the last date of exposure for all workplace contacts.
- 8 weeks post exposure for workplace contacts would be – March 29th
- 10 weeks post exposure for workplace contacts would be – April 12th
Results

- The local case manager is responsible for giving the patient, and/or their parent if a minor, their test results.
- Individuals with positive TST or IGRA results must be referred to either their private provider or a State-supported TB Clinic for evaluation.
- Individuals who are started on treatment for latent TB infection should be followed by the local case manager until completion of therapy.
Special Considerations

- Children under 5 years of age
- Interjurisdictional Notification (IJN) Contacts
- Contact is in your town but source case lives elsewhere
- Exposures in your community (worksite, etc.)
- Contacts who have previously positive test results
Children under Five

- Symptom evaluation
- TST – any age
- IGRA – approved for ≥ 2 years of age
- Chest X-ray (PA and Lateral)
- If test is negative – start on preventive therapy until the second test
- If test is positive – full TB work-up with treatment beyond the “window” period
Interjurisdictional Contacts (IJN)

- You may receive notification about a contact living in your city
- Whose index case lives in another city or town in Massachusetts
- Whose index case lives in another state
- Next steps are the same (testing, referral, treatment) even though you didn’t interview the index case
- Sometimes a large testing event is conducted at a workplace – the DPH epidemiologist will discuss the logistics and plan with you
Exposure in your community

- Workplace, schools, facilities
- Source case lives elsewhere
- Investigation in collaboration with DPH
Prior Positive Contacts (TST or IGRA)

- Known vs. documented results
- History and Risk assessment
- Review prior treatment (if available)
- Symptom evaluation
- May need chest X-ray and evaluation
- Opportunity for treatment
Options for reporting contacts to DPH

- Add notes to the MAVEN event for the contact (rather than the index case)
- Fax documentation to DPH 617-887-8791
- Call DPH epidemiologist 617-983-6970

Contacts will be linked in MAVEN to the active case
Local Public Health: Steps for Contact Investigation

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Connect to Care

- State-supported TB Outpatient Services
  - Massachusetts TB Outpatient Services | Mass.gov

- Private Provider
Contact Investigation Challenges

- Communication barriers
- Power dynamics
- Vaccination history
- TB beliefs and practices
- Structural barriers
- Patient-level barriers
- Completion of TB treatment
Take Home Points

- Contact investigations are a crucial part of TB Response and case management.
- Obtaining information on contacts to potentially infectious cases is an ongoing process that requires communication with active cases.
- Once identified, contacts of infectious cases should be tested for infection and, if positive, referred for a clinical evaluation and latent TB infection treatment, and followed until treatment completion.
- State resources are available to assist in contact investigation including nursing and epidemiology support for clinical and technical assistant and community health worker support for language and cultural brokering.

*Progression to Active TB can be Preventable with therapy*
DPH resources

- Technical Assistance – Just-in-time training
- Contact investigation support with PPD or IGRA testing
- Community Health Worker support
- Transportation services
- Strategic thinking re options for contact investigation and case management
- Available through course of treatment - from early diagnosis to completion of therapy
- Archived trainings/resources in MAVEN Help
  - Introduction to Disease Response
  - DOT (Direct Observation Therapy)
  - Class AB New Arrivals
Questions
General Resources

- CDC Division of TB Elimination - http://www.cdc.gov/tb/
- https://sites.bu.edu/masslocalinstitute/2014/06/23/disease-case-management/
- MDPH TB Program – www.mass.gov/tuberculosis
Thank you